Literacy Ontario

Adult Literacy in Ontario:

The International Adult Literacy Survey Results

Literacy and Basic Skills Section
Workplace Preparation Branch
Ministry of Education and Training

Ontario

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The International Adult Literacy Survey Results

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INTRODUCTION

International Adult Literacy Survey (IALS)

In 1990, Statistics Canada released the results of the *Survey of Literacy Skills Used in Daily Activities* (LSUDA), a 1989 Canada-wide survey of the reading skills of adults. In 1992, the then Ontario Ministry of Education reported on the LSUDA results for Ontario (Stan Jones, *Survey of Adult Literacy in Ontario*). Shortly after the release of the LSUDA results in Canada and those of the National Adult Literacy Survey in the United States, interest in a comparative international study of adult literacy began to grow. In December 1995, the first results of the 1994 survey of adult literacy in seven countries[1], the International Adult Literacy Survey (IALS), were reported in *Literacy, Economy and Society*, a joint publication of Statistics Canada and the Organisation for Economic Co-operation and Development. In September 1996, Statistics Canada released *Reading the Future: A Portrait of Literacy in Canada*, a report on the national data collected in IALS.

Literacy in IALS was defined as:

> Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential.

To measure literacy in IALS, respondents answered a set of test questions designed to measure adult reading skills as well as background questions about their education, work experience, and literacy practices. The test was composed of three reading scales:

- **Prose** - the knowledge and skills needed to understand and use information from texts such as editorials, news stories, brochures, and pamphlets;
- **Document** - the knowledge and skills required to locate and use information contained in various formats, including job applications, payroll forms, transportation schedules, maps, tables, and graphs; and
- **Quantitative** - the knowledge and skill required to apply arithmetic operations, either alone or sequentially, to numbers embedded in printed materials, such as balancing a chequebook, figuring out a tip, completing an order form, or determining the amount of interest on a loan.

In all cases, the material used in the test was taken from existing sources and was reproduced intact, using the original layout and typography as far as possible. Since all the participating countries contributed texts to the test, some texts were translated into English or French for the tests used in Canada. Educational Testing Service conducted an array of tests designed to detect cultural bias in the items; none was found.

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[1] The participating countries were Canada, Germany, the Netherlands, Poland, Sweden, Switzerland, and the United States of America.

The results of the survey are reported in five levels for each of the three scales. A complete description of the levels is in Table 1. Since only a small number of adults scored at level 5, it is impossible to report separately on this level and it has been combined with level 4. It would be unlikely, in any case, that adult literacy practitioners or policy makers would be concerned with the difference between these two levels.

Ontario Participation

Ontario participated in the survey in order to gain key data to inform policy development and to focus its literacy programming. The present report covers in detail the IALS results for Ontario. It updates and supplements the previous report, *Survey of Adult Literacy in Ontario*. It is organised much as the previous report: there is a table and a graph with commentary for each of the major literacy relationships. Throughout the text, shaded boxes provide background information. Usually the tables provide results for all three scales, but the graphs are used to point to particularly interesting results in part of the data.

In Ontario, 1,925 adults were surveyed by IALS. Of these, 1,044 were in a special Francophone sample. The remaining 881 are a representative sample of adults in Ontario, excluding only residents of First Nations Territories, residents of institutions, and those in the armed forces. These exclusions represent less than 2% of the adult population. While the LSUDA survey included adults between 16 and 69 years old, IALS surveyed all adults 16 and older. Since much of the Ontario sample represents a planned over-sampling of those who report French as their mother tongue, the effective sample size is smaller than 1,925. A full description of the sources of error can be found in Appendix D.

Main Findings

- Ontario has higher literacy levels than the national average. 55.8% of Ontario's adult population has sufficient literacy skills while the national average is 52.4%. In addition, Ontarians have higher numeracy skills than Canada as a whole: 57% versus 52%.

- In Ontario, 20.2% of the adult population does not have basic literacy skills while a further 24% could be considered to have inadequate skills to meet changing labour market needs.

- There is little difference in the Ontario results from LSUDA (1989) and IALS (1994).

- As in all other jurisdictions, literacy levels in Ontario decline after age 45.

- Most graduates of secondary school have achieved level 3 literacy.

- Ontario's Francophone community has lower literacy results than the general population.

- There is little difference in the Ontario results between men and women. Ontario females had higher results than men on the prose tests while males outperformed females in the document tasks. There was little difference in the quantitative tasks.

- Employed Ontarians are more likely to have higher literacy results than those unemployed.

Table 1. Descriptions of the IALS Levels for each scale.

	Prose	Document	Quantitative
Level 1 (0 - 225)	Most of the tasks at this level require the reader to locate one piece of information in the text that is identical or synonymous to the information given in the directive If a plausible incorrect answer is present in the text, it tends not to be near the correct information	Most of the tasks at this level require the reader to locate a piece of information based on a literal match. Distracting information, if present, is typically located away from the correct answer. Some tasks may direct the reader to enter personal information onto a form.	Although no quantitative tasks used the IALS fall below the score value of 225, experience suggests that such tasks would require the reader to perform a single, relatively simple operation (usually addition) for which either the numbers are already entered onto the given document and the operation is stipulated, or the numbers are provided and the operation does not require the reader to borrow.
Level 2 (226 - 275)	Tasks at this level tend to require the reader to locate one or more pieces of information in the text, but several distracters may be present, or low level inferences may be required. Tasks at this level also begin to ask readers to integrate two or more pieces of information or to compare and contrast information	Document tasks at this level are a bit more varied. While some still require the reader to match on a single feature, more distracting information may be present or the match may require a low-level inference. Some tasks at this level may require the reader to enter information onto a form or to cycle through information in a document.	Tasks in this level typically require readers to perform a single arithmetic operation (frequently addition or subtraction) using numbers that are easily located in the text or document. The operation to be performed may be easily inferred from the wording of the question or the format of the material (for example, a bank deposit form or an order form).
Level 3 (276 - 325)	Tasks at this level tend to direct readers to search texts to match information that require low-level inferences or that meet specified conditions. Sometimes the reader is required to identify several pieces of information that are located in different sentences or paragraphs rather than in a single sentence. Readers may also he asked to integrate or to compare and contrast information across paragraphs or sections of text.	Tasks at this level appear to be most varied. Some require the reader to make literal or synonymous matches but usually the matches require the reader to take conditional information into account or to match on multiple features of information. Some tasks at this level require the reader to integrate information from one or more displays of information. Other tasks ask the reader to cycle through a document to provide multiple responses.	Tasks found in this level typically require the reader to perform a single operation. However, the operations become more varied—some multiplication and division tasks are found in this level. Sometimes two or more numbers are needed to solve the problem and the numbers are frequently embedded in more complex displays. While semantic relation terms such as "how many" or "calculate the difference" are often used, some of the tasks require the reader to make higher order inferences to determine the appropriate operation.
Level 4 (326 - 375)	These tasks require readers to perform multiple-feature matching or to provide several responses where the requested information must be identified through text-based inferences. Tasks at this level may also require the reader to integrate or contrast pieces of information, sometimes presented in relatively lengthy texts. Typically, these texts contain more distracting information and the information that is requested is more abstract.	Tasks at this level, like those in the previous levels, ask the reader to match on multiple features of information, to cycle through documents, and to integrate information. frequently however, these tasks require the reader to make higher order inferences to arrive at the correct answer. Sometimes conditional information is present in the document, which must be taken into account by the reader.	With one exceptions the tasks at this level require the reader to perform a single arithmetic operation where typically either the quantities or the operation are not easily determined. That is for most of the tasks at this level, the question or directive does not provide a semantic relation term such as "how many" or "calculate the difference" to help the reader.
Level 5 (376 - 500)	Some tasks at this level require the reader to search for information in dense text that contains a number of plausible distractors. Some require readers to make high-level inferences or use specialized knowledge.	Tasks at this level require the reader to search through complex displays of information that contain multiple distractors to make high-level inferences, process conditional information, or use specialized knowledge.	These tasks require readers to perform multiple operations sequentially and they must disembed the features of the problem from the material provided or rely on background knowledge to determine the quantities or operations needed.

LSUDA AND IALS

IALS used a different organization of levels than the earlier LSUDA (Survey of Literacy Skills Used in Daily Activities) study. IALS (International Adult Literacy Survey) made more distinctions at the higher end of the scale while LSUDA made more at the lower end. Nonetheless, the two can be roughly matched as in Table 2.

Table 2. Comparisons of IALS and LSUDA results, adults living in Ontario, 16-69.

		IALS			
LSUDA Levels	LSUDA Scale	Prose Scale	Document Scale	Quantitative Scale	IALS Levels
			%		
1	9	16.2	18.0	17.0	1
2	8				
3	21	27.6	21.7	22.6	2
4	62	28.0	31.6	34.7	3
		28.1	28.7	25.7	4/5

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Since LSUDA covered a more restricted age range than IALS, only comparable age groups are included in this table. There are only small differences between the LSUDA and IALS results, most notably in IALS 2 = LSUDA 3 and LSUDA 4 = IALS 3 and 4/5 on the prose scale. This difference is most likely due to some refinements in the criteria for the levels and to improved measurement of the differences among the higher levels.

Table 3. The distribution of literacy on all three scales by regions of Canada, adults 16 and over.

	Prose Reading Level			
	1	2	3	4/5
Region of Canada		%		
Ontario	19.2	27.6	27.8	25.4
Atlantic Provinces	24.9	25.5	35.1	14.6
Quebec	27.8	25.5	38.7	7.9
Western Provinces	17.9	23.7	33.7	24.8
All other provinces	22.9	24.7	35.9	16.5

	Document Reading Level			
	1	2	3	4/5
Region of Canada		%		
Ontario	21.1	21.7	31.2	25.9
Atlantic Provinces	28.1	26.0	31.7	14.3
Quebec	30.5	26.8	29.4	13.3
Western Provinces	18.8	25.3	28.8	27.0
All other provinces	24.8	26.0	29.4	19.7

	Quantitative Reading Level			
	1	2	3	4/5
Region of Canada		%		
Ontario	20.3	22.8	33.6	23.3
Atlantic Provinces	23.1	30.2	30.3	16.4
Quebec	28.4	31.7	30.3	9.7
Western Provinces	17.6	24.4	33.2	24.9
All other provinces	22.7	28.1	31.6	17.5

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Ontario resembles the provinces to its west more than it does those to its east. Indeed, the numbers suggest that there is little difference between Ontario and the western provinces as a group.

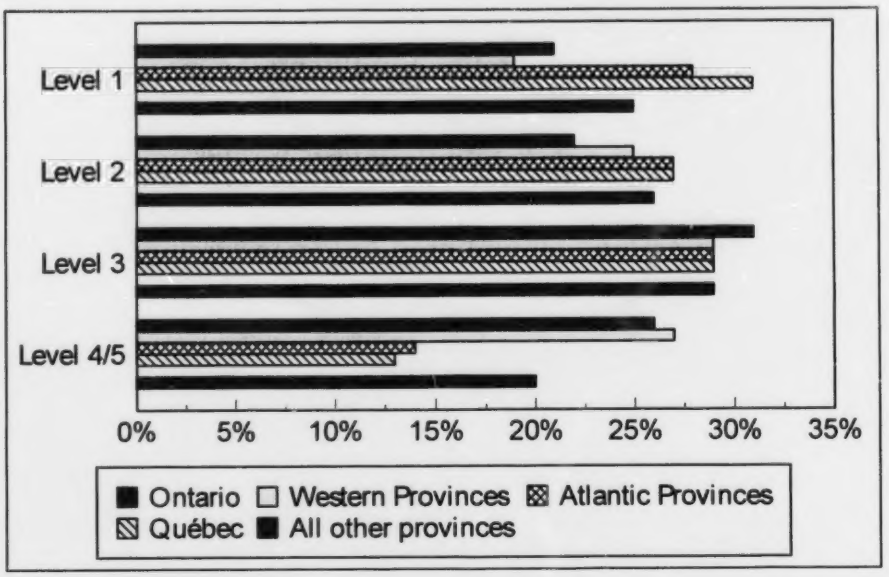

Figure 1. The distribution of document literacy by region of Canada, adults 16 and over. (*International Adult Literacy Survey*, Statistics Canada, 1995.)

For other Canadian Data, see Appendix C.

LITERACY AND AGE

Young adults do relatively well on the document scale tasks, with a greater proportion of this age group scoring at level 4/5 than all but the 36-45 group. On prose and quantitative this youngest group does not have as many skills at the top level as those 26-35 and those 36-45. The two graphs in Figure 2 show the contrast between the relative performance of young adults on the prose and document scales.

Older adults, especially those over 46, did not do well regardless of scale. Adults 46-55 do not have a larger proportion in level 4/5 as do the younger age groups, but neither is there a strikingly large proportion at level 1. Rather, it seems this age group is concentrated at level 2. Typically, well over one-third of those over 55 are in level 1. This group has the lowest educational attainment, with only 44% having completed secondary school and only 66% having finished grade 9. In contrast, only 14% of those 46-55 did not complete primary school, and 64% went on to finish high school. Those between 24 and 46 have the highest educational attainment with 78% completing secondary school. (Many of those under 25 are still in school so that reporting on education completed would be misleading for this group.)

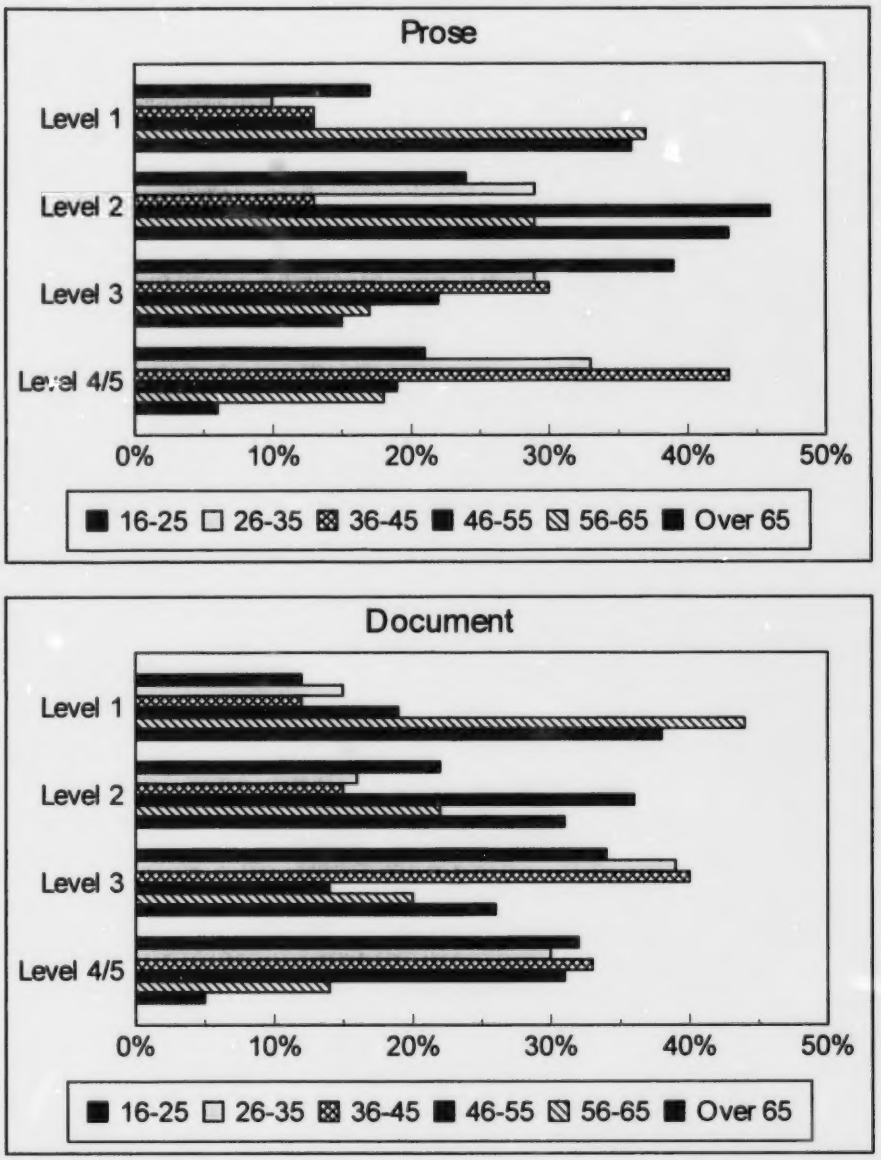

Figure 2. Comparison of the distribution of prose and document literacy by age, Ontario residents age 16 and over.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Table 4. Distribution of literacy by various age groups, all scales, residents of Ontario, 16 and older.

	Prose Reading Level			
	1	2	3	4/5
Age		%		
16 - 25	16.5	24.2	38.6	20.7
26 - 35	10.4	28.5	28.6	32.5
36 - 45	13.2	13.0	30.4	43.3
46 - 55	13.3	46.1	21.6	19.0
56 - 65	36.7	29.1	16.5	17.8*
Over 65	43.1	31.4	22.6	2.9*

	Document Reading Level			
	1	2	3	4/5
Age		%		
16 - 25	12.3*	22.4	33.5	31.7
26 - 35	14.4	16.4	38.8	30.4
36 - 45	12.0	15.4	39.8	32.9
46 - 55	19.2	35.9	14.4	30.5
56 - 65	43.9	22.0	19.8	14.2*
Over 65	46.0	24.4	27.2	2.3*

	Quantitative Reading Level			
	1	2	3	4/5
Age		%		
16 - 25	13.2	31.8	37.1	18.0
26 - 35	12.2	15.7	38.7	33.4
36 - 45	12.8	14.1	34.1	39.0
46 - 55	17.6	34.3	32.7	15.4*
56 - 65	39.3	17.2	31.3	12.2*
Over 65	46.2	28.9	21.7	3.3*

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

EDUCATION AND LITERACY

There are clear and significant differences in the literacy attainment of individuals with differing levels of education.

- Those who have had no secondary education are clustered in level 1 on all scales.
- Those who have attended secondary school, but not graduated have the highest concentration in level 2 on all scales, although over 35% are at level 3 or higher.
- Those who have graduated from secondary school with no further education have the largest proportion in level 3 on the document and quantitative scale. On the prose scale the numbers in levels 2 and 3 are similar.
- Those who have graduated from college also have large numbers in level 3, but unlike secondary school graduates, the proportion in level 4/5 is greater than that in level 2 and there are less than 10% in level 1.
- University graduates are always clustered in level 4/5 with very few in levels 1 and 2.

The graphs in Figure 3 compare the literacy levels of secondary school graduates, college graduates and university graduates on the three scales. The 'university advantage' is much less apparent on the document scale.

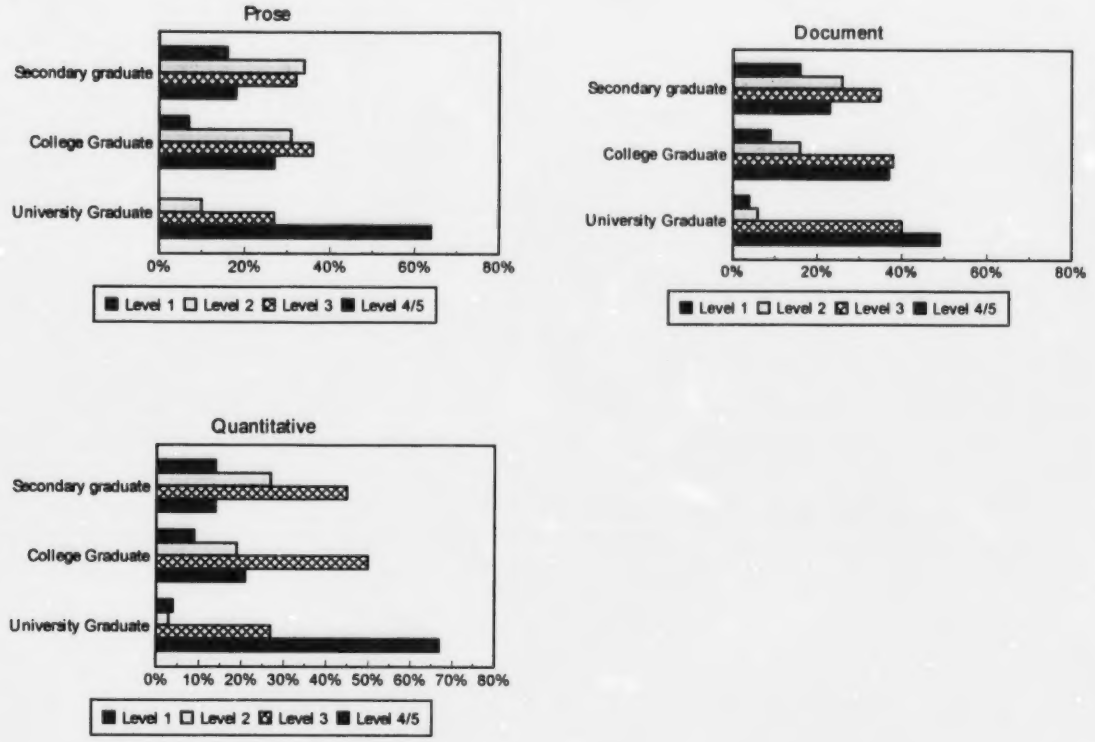

Figure 3. Comparison of literacy distribution on all three scales for different levels of educational attainment, residents of Ontario, 16 and older.

Table 5. Distribution of literacy for different levels of education, residents of Ontario, 16 and older

	Prose Reading Level			
	1	2	3	4/5
Education	%			
Less than grade 8	91.5	8.3*	0.2*	
Completed primary	64.3	33.5	2.1*	
Some secondary	21.3	36.9	29.3	12.6*
Secondary graduate	15.5	33.9	32.2	18.4
Completed college	6.8*	31.0	35.7	26.5
Completed university	0.1*	9.6	26.5	63.8

	Document Reading Level			
	1	2	3	4/5
Education	%			
Less than grade 8	91.4	8.6*	0.1*	
Completed primary	70.8	20.8	8.4*	
Some secondary	22.0	37.9	27.0	13.1
Secondary graduate	16.2	26.0	35.0	22.8
Completed college	8.8*	16.2	38.3	36.8
Completed university	4.2*	6.4	40.3	49.1

	Quantitative Reading Level			
	1	2	3	4/5
Education	%			
Less than grade 8	91.1	7.7*	1.0*	0.2*
Completed primary	72.7	24.5	2.9*	
Some secondary	19.4	44.6	26.4	9.6*
Secondary graduate	14.3	26.9	44.5	14.3
Completed college	9.3*	19.3	50.0	21.4
Completed university	3.5*	2.8*	27.1	66.7

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

PARENT'S EDUCATION AND LITERACY

Table 6 presents the relationship between literacy skill and the educational attainment of a parent. In each case, the parent represented is the one with the highest level of education. The data show that respondents whose parents have little education are more likely to be at the lower literacy levels, though the effect of parent's education is less than that of own education. There is, of course, a significant relation between the levels of education of parents and their children.

Mother's and father's education have overall similar effects, except that respondents whose fathers had post-secondary education are more likely to be at level 4/5 than those whose mothers had post-secondary education. Figure 4 contrasts the effect of each parent's education on document literacy levels and shows the difference in effect; the results for prose and quantitative are similar. On the other hand, respondents whose mothers had low education are more likely to be at level 1 than those whose fathers had low education.

Figure 4. Comparison of the effect of mother's and father's education on document literacy, Ontario residents, 16 and older.

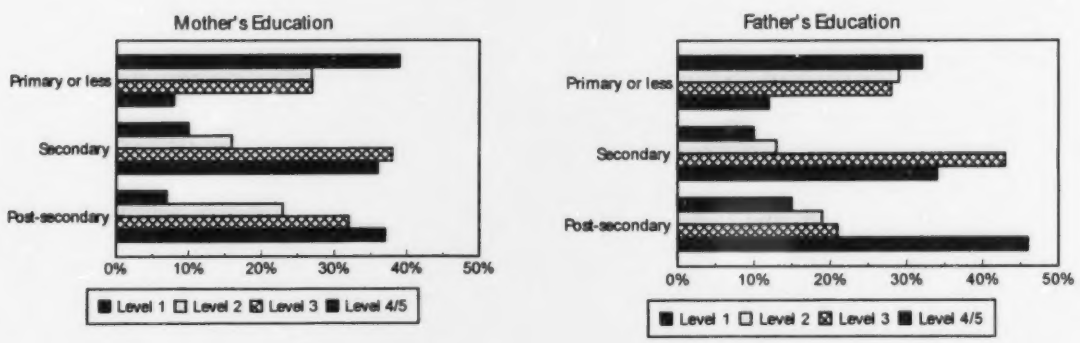

Table 6. Distribution of literacy on all three scales by the highest level of education of a parent, Ontario residents, 16 and over.

	Prose Reading Level			
	1	2	3	4/5
Parent's Education		%		
Less than grade 8	64.5	18.2	10.7	6.6*
Completed primary	17.9	37.4	24.3	20.4*
Some secondary	8.4	27.2	35.4	29.0
Secondary graduate	10.6	26.4	31.3	31.7
Completed college	11.3*	30.1	32.3	26.2
Completed university	9.1*	22.6	29.3	39.0

	Document Reading Level			
	1	2	3	4/5
Parent's Education		%		
Less than grade 8	67.6	12.1	11.5	8.8*
Completed primary	21.9	42.5	27.5	8.0
Some secondary	9.3	18.8	30.6	41.3
Secondary graduate	11.5	14.8	47.6	26.1
Completed college	12.2*	26.7	26.4	34.7
Completed university	12.1*	18.3	26.0	43.6

	Quantitative Reading Level			
	1	2	3	4/5
Parent's Education		%		
Less than grade 8	65.0	20.4	9.0	5.6*
Completed primary	21.6	42.9	26.6	8.9*
Some secondary	7.7	18.7	47.0	26.6
Secondary graduate	10.6	15.9	46.0	27.5
Completed college	9.1*	35.6	30.6	24.8
Completed university	10.9*	13.8	32.0	43.3

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

All respondents were offered a choice of an English or a French test. Respondents who chose to take the test in French scored lower than those who took the test in English. The educational attainment of those who took the French test is lower; 37% of this group had not completed secondary school, whereas only 29% of those taking the English test had not.

Figure 5, reprinted from the national report, shows that once educational differences are taken into account, there are no systematic differences between these language groups.

The criterion used for distinguishing language groups in Table 7 - language of test - does not correspond to the usual criterion for identifying mother tongue, language learned first in childhood. Not all those who would be identified as French mother tongue chose to take the test in French; indeed just over half of those in Ontario who said French was their mother tongue elected to be tested in English. Table 8 displays the results by mother tongue and language of test.

Figure 5. Average prose literacy scores for different levels of educational attainment for three language groups, Canadian adults, 16 and older.

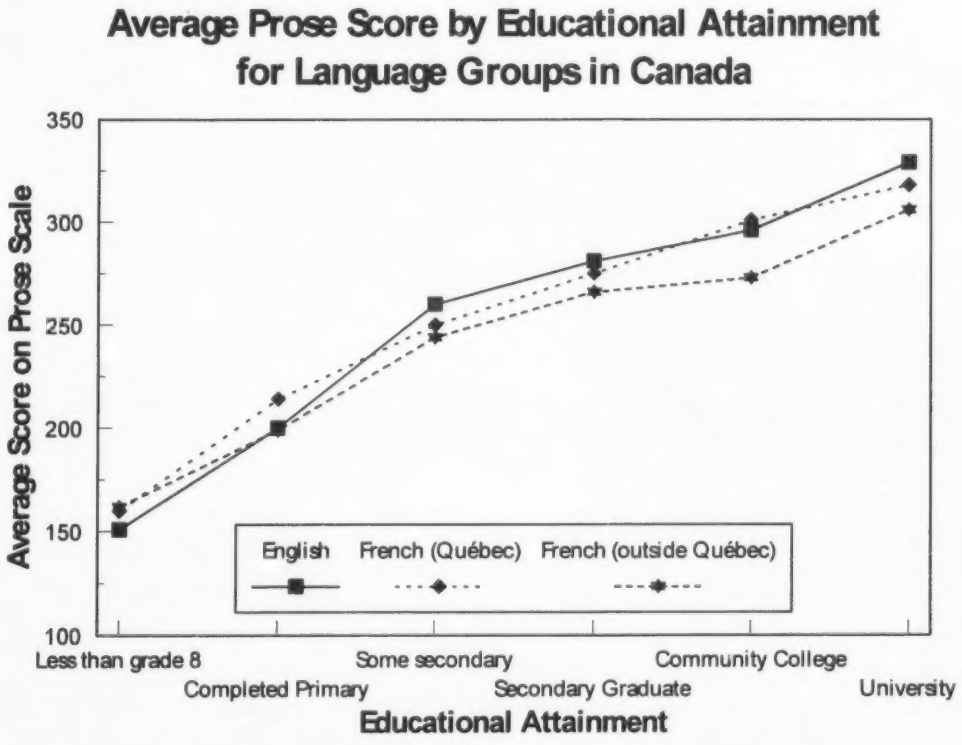

Table 7. Distribution of literacy across all three scales by language of test, Ontario residents, 16 and older.

	Prose Reading Level			
	1	2	3	4/5
Test Language	%			
English	18.9	27.5	27.7	25.9
French	30.1	30.8	29.5	9.7

	Document Reading Level			
	1	2	3	4/5
Test Language	%			
English	20.9	21.6	31.3	26.2
French	29.4	27.2	27.1	16.3

	Quantitative Reading Level			
	1	2	3	4/5
Test Language	%			
English	20.1	22.6	33.7	23.6
French	25.1	29.8	31.6	13.5

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Table 8. Distribution of literacy on all three scales by mother tongue and language of test, Ontario residents, 16 and older.

Mother Tongue	Test Language	Prose Reading Level 1	2	3	4/5
		%			
English	English	12.2	25.6	31.7	30.4
French	French	30.6	30.9	30.2	8.3
French	English	27.9	31.5	32.0	8.6
Other	English	45.5	35.1	10.1*	9.3*

Mother Tongue	Test Language	Document Reading Level 1	2	3	4/5
		%			
English	English	14.8	20.1	35.4	29.7
French	French	30.0	27.8	27.4	14.9
French	English	29.2	33.1	27.2	10.5
Other	English	45.0	26.0	15.0*	14.1*

Mother Tongue	Test Language	Quantitative Reading Level 1	2	3	4/5
		%			
English	English	14.4	20.7	36.6	28.3
French	French	25.6	30.1	30.9	13.5
French	English	26.8	33.7	31.1	8.5
Other	English	43.2	29.0	21.6*	6.2*

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

79 respondents reported both English and French as mother tongue. These bilinguals are too few for separate reporting. The 72 who took the test in English are included in the English mother tongue group and the 7 who took the test in French are included in the French mother tongue group.

Although IALS is not a survey of language use, information collected about use is useful in understanding what "language of test" in Tables 7 and 8 means. Table 9 reports the relationship between several variables of language preference and choice of language for the literacy test.

Table 9. Relationship between language use and language selected for test, Ontario residents, 16 and older.

Of those who said French is the language...	Proportion who took test in French
Most used at home	67
Most used at work	69
Most used for leisure activities	73
Easiest to use	75
First learned (mother tongue)	53

Of those who said English is the language...	Proportion who took test in English
Most used at home	93
Most used at work	85
Most used for leisure activities	90
Easiest to use	94
First learned (mother tongue)	99

Note: These figures are actual counts, not population estimates.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

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Most used at home	93
Most used at work	85
Most used for leisure activities	90
Easiest to use	94
First learned (mother tongue)	99

Note: These figures are actual counts, not population estimates.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

IMMIGRATION AND LITERACY

Table 10 below shows that immigrants to Canada both do more poorly than those born in Canada (larger proportions at level 1) and as well as or better than those born in Canada (larger or equal proportions at level 4/5). In this, Ontario is like Canada as a whole, but unlike the other IALS participating countries, where immigrants uniformly performed less well than native-born respondents. This likely reflects the multiple faces of Canadian immigration policy. Table 11 shows how immigrants' mother tongue is related to literacy skill.

Previous studies have shown that age of immigration also has a significant effect on literacy accomplishment, with individuals who started to learn English or French before age 16 having achievements indistinguishable from those born in Canada. The sample size in Ontario is too small to investigate that relationship with this data.

Table 10. Distribution of literacy on all three scales by immigration status, Ontario residents, 16 and older.

	Prose Reading Level			
	1	2	3	4/5
Born in Canada?		%		
Yes	13.3	28.2	34.7	23.8
No	32.5	26.3	12.2	29.1

	Document Reading Level			
	1	2	3	4/5
Born in Canada?		%		
Yes	15.4	23.1	35.5	26.0
No	34.0	18.6	21.5	25.8

	Quantitative Reading Level			
	1	2	3	4/5
Born in Canada?		%		
Yes	14.7	25.9	37.8	21.5
No	32.7	15.9	24.0	27.4

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Immigrants whose mother tongue is English were highly likely to be in level 4/5, unlike those whose mother tongue is neither English nor French. These are most likely to be in level 1. Those with English mother tongue are also a highly educated group: 47% have completed university and 72% have completed some form of post-secondary program. In contrast, only 21% of those whose first language is neither English nor French have completed a post-secondary program.

Table 11. Distribution of literacy on all three scales by mother tongue, Ontario residents who were not born in Canada, 16 and older.

	Prose Reading Level	
	1 & 2	3 & 4/5
Mother Tongue	%	
English	28.0	72.0
Other	89.7	10.3*

	Document Reading Level	
	1 & 2	3 & 4/5
Mother Tongue	%	
English	25.8	74.2
Other	79.6	20.4*

	Quantitative Reading Level	
	1 & 2	3 & 4/5
Mother Tongue	%	
English	23.1	76.9
Other	74.4	25.6*

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

GENDER AND LITERACY

Males and females have traditionally scored differently on different types of school test. On the Canadian Student Achievement Indicators Project, for example, with 13- and 16-year-old students, females did better than males on the reading and writing assessments and males did better on mathematics assessments. In IALS, Ontario females had higher results than males on the prose tasks while males outperformed females on the document tasks. There was little difference on the quantitative tasks. Nationally, females did better on prose and males slightly better on document and quantitative. These differences may reflect historical differences in course-taking patterns in school.

Table 12. Distribution of literacy on all three scales by gender, Ontario residents, 16 and older.

	Prose Reading Level			
	1	2	3	4/5
Gender		%		
Male	19.3	31.4	31.7	17.6
Female	19.1	24.0	24.0	32.9

	Document Reading Level			
	1	2	3	4/5
Gender		%		
Male	18.6	21.1	31.7	28.6
Female	23.5	22.3	30.8	23.4

	Quantitative Reading Level			
	1	2	3	4/5
Gender		%		
Male	16.4	23.5	36.8	23.3
Female	23.9	22.1	30.6	23.4

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

EMPLOYMENT AND LITERACY

Statistics Canada regards individuals to be unemployed if they are without work and actively seeking work. Individuals are employed if they have paid work, whether full-time or part-time, or are self-employed. Individuals are out of the labour force if they say they do not have paid work, are not self-employed, and are not looking for work. This group includes retired individuals, homemakers, and others. Individuals who identified themselves as students are not included in this table. Employment status is based on self-report.

Employed respondents are much more likely to be in level 4/5 than are those who report that they are unemployed or are out of the labour force. The differences exist both because individuals with high literacy skills are more likely to find work and because individuals who work regularly have more opportunities to use their skills, thus maintaining and enhancing them. There are no significant differences between those who are unemployed and those out of the labour force. That those who are not employed have relatively low skills means both that they will have difficulty finding employment and that Ontario employers will have difficulty hiring workers with high skills. As Figure 7 shows, the job growth is in industries and occupations with high skill demands. Without efforts to improve the skills of the reserve labour force in Ontario, growth of the provincial economy may be slowed.

As Figure 6 shows, those working part-time have somewhat higher skills than those working full-time. This relationship is particularly true for those who work part-time by choice; over 40% are at level 4/5 on the prose and document scales, compared to the 30% of full-time workers who are at this level.

Respondents who say they work part-time because they prefer it represent 38% of all Ontario part-time workers in the survey. Another 35% say they work part-time because they are students. The remaining 28% say they would prefer to work full-time, if they could find a full-time job.

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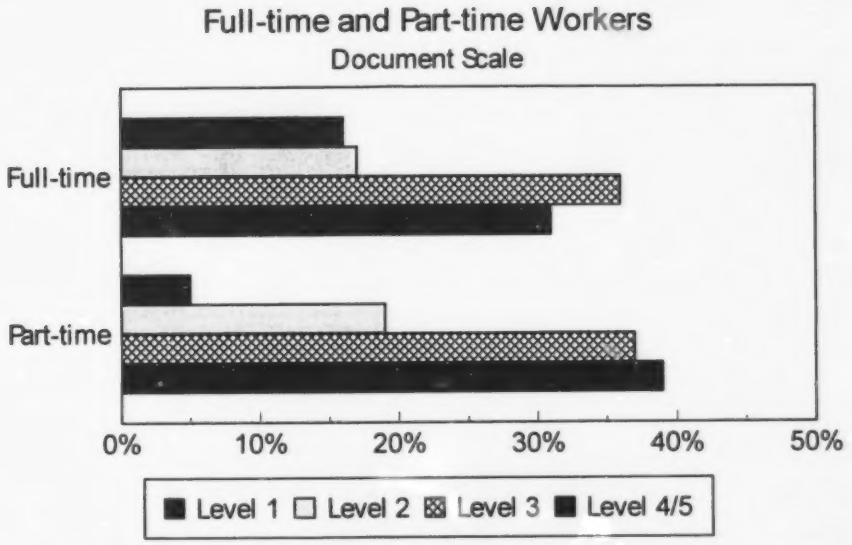

Figure 6. Comparison of document literacy skills of full- and part-time workers, residents of Ontario, 16 and older.

Table 13. Distribution of literacy on all three scales by employment status, Ontario residents, 16 and older.

	Prose Reading Level			
	1	2	3	4/5
Employment		%		
Employed	12.0	25.8	31.2	31.1
Unemployed	33.7*	26.8*	29.8	9.7*
Out of labour force	33.5	31.3	19.6	15.6

	Document Reading Level			
	1	2	3	4/5
Employment		%		
Employed	13.2	17.4	36.3	33.1
Unemployed	32.6*	26.5*	20.3	20.6*
Out of labour force	40.1	24.9	24.3	10.7

	Quantitative Reading Level			
	1	2	3	4/5
Employment		%		
Employed	12.9	19.7	36.6	30.7
Unemployed	32.9*	26.6	28.5	12.0*
Out of labour force	37.6	24.6	27.4	10.5

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

The industries were grouped to provide comparability to the previous Ontario report. In some cases these categories combine industries that were reported separately in the national report; sample size limitations required the use of fewer categories in this report.

These categories include only those who were working or had recently worked and refers to the current or most recent job.

Primary	Agriculture and other primary resource industries
Manufacturing	Both durable and non-durable goods manufacturing
Construction	Includes construction, transportation, gas, and electricity
Trade	Includes both wholesale and retail trade
Service	All service industries: personal, community, and financial

The largest industry category, service, is the one with the largest proportion of workers in level 4/5. Manufacturing and construction, transportation, gas and electricity have the largest proportions at level 1. The large number of manufacturing workers at the lowest level on prose contrasts with the distribution of literacy in manufacturing industries in the European countries in IALS where the numbers at this level in manufacturing were much smaller.

There has been much commentary about the changes in skill required as the economy changes. Figure 7 shows that prose literacy skills are high in those industries which are growing and low in the declining sectors.[2]

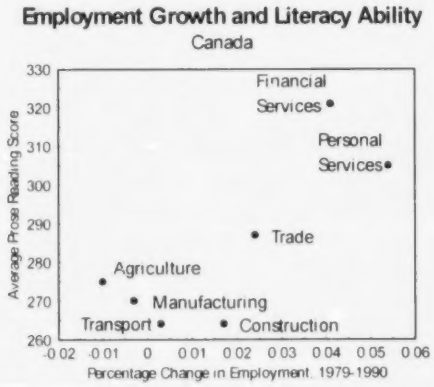

Figure 7. Relationship between growth and decline in employment by industry and literacy skill of workers in the industry, Canadian adults 16 and older.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995, and OECD Jobs Study, 1994.

[2] Canadian national data is used for this figure as growth figures for industries in Ontario are unavailable.

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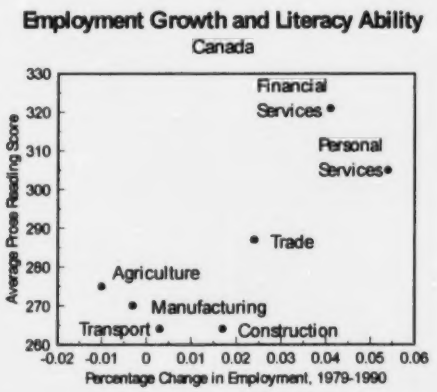

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Table 14. Distribution of literacy on all three scales by industry, Ontario residents, 16 and older.

Industry	Prose Reading Level			
	1	2	3	4/5
	%			
Primary industries	16.3*	16.6*	42.4*	24.8*
Manufacturing	23.2	18.3	39.1	19.4*
Construction	35.3	16.4	18.6	29.7*
Trade	14.5	28.8	31.4	25.2
Service	2.7	28.6	29.3	39.4

Industry	Document Reading Level			
	1	2	3	4/5
	%			
Primary industries	14.0*	12.2*	53.6*	20.3*
Manufacturing	18.0	14.4	36.6	31.0*
Construction	34.4*	11.9	32.8	20.9*
Trade	15.1	31.2	26.9	26.8
Service	6.8	12.7	39.8	40.6

Industry	Quantitative Reading Level			
	1	2	3	4/5
	%			
Primary industries	14.1*	27.5*	37.5*	20.9*
Manufacturing	18.7	19.2	31.8	30.3*
Construction	34.2*	12.6	33.6	19.6*
Trade	19.5	30.8	34.9	14.8
Service	3.6	15.1	42.1	39.1

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Occupations are also grouped to provide comparability to the previous Ontario report. In some cases these categories combine occupations that were reported separately in the national report; sample size limitations required the use of fewer categories in this report.

These categories include only those who were working or had recently worked and refers to the current or most recent job.

Management	Includes managers, professionals, and technicians
Clerical	Stenographers, bookkeepers, receptionists
Sales/service	All sales and service occupations
Primary	Farming and other primary occupations
Skilled trades	Machine operators, skills craftsmen, transportation

Literacy skills are distributed quite distinctly in different occupations and there is marked variation from scale to scale. For example, clerks have only a small proportion in level 4/5 on prose, but much larger proportions at this level on document and on quantitative. In general, those occupations which have high educational demands, such as management - here including professionals and technicians - typically have a large proportion in level 4/5. Again, in contrast to the case in the European countries that participated in IALS, a large proportion of those in skilled trades are at level 1, though about a third are in level 3. Occupations that are growing tend to be those that have high literacy skills, Figure 8[3], though the effect is not as marked as for industries.

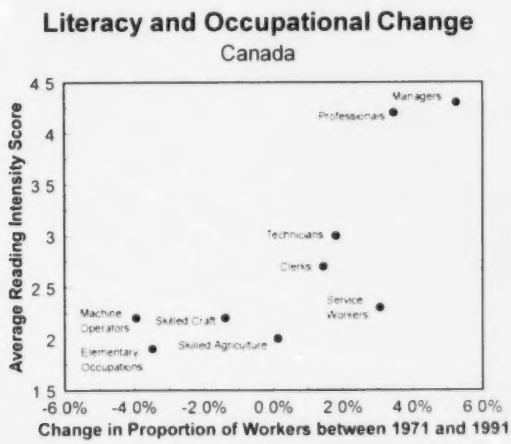

Figure 8. Relationship between growth and decline in employment by occupation and literacy skill of workers in the occupation, Canadian adults 16 and older.

[3] Again, because occupation changes for Ontario are not available, this graph uses Canadian national data.

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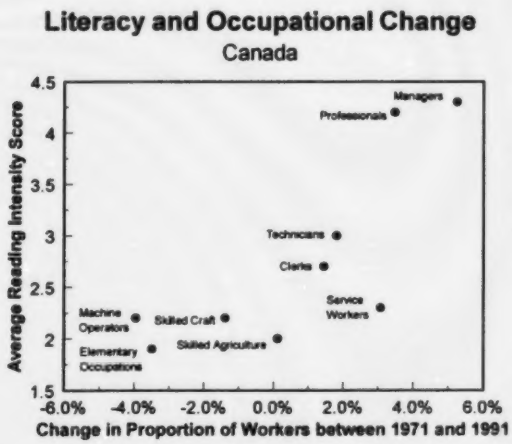

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[3] Again, because occupation changes for Ontario are not available, this graph uses Canadian national data.

Table 15. Distribution of literacy on all three scales by occupation, Ontario residents, 16 and older.

Occupation	Prose Reading Level			
	1	2	3	4/5
	%			
Management	1.5*	29.1	25.0	44.3
Clerical	9.4*	15.8	57.4	17.4
Sales/Service	14.2*	30.2	24.7	30.9
Primary	20.8	28.6	31.8*	18.8*
Skilled Trades	34.6	17.1	30.7	17.6*

Occupation	Document Reading Level			
	1	2	3	4/5
	%			
Management	3.7*	12.7	41.4	42.2
Clerical	5.1*	20.3	36.1	38.5
Sales/Service	23.6*	26.6	22.4	27.3
Primary	21.7	19.1	42.1	17.1*
Skilled Trades	29.9	16.5	32.7	21.0

Occupation	Quantitative Reading Level			
	1	2	3	4/5
	%			
Management	2.1*	11.9	40.0	46.1
Clerical	9.7*	27.7	35.6	27.0
Sales/Service	20.9*	28.1	39.9	11.1*
Primary	23.7	18.6	40.5	17.1*
Skilled Trades	30.1	25.0	31.2	13.7*

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

INCOME AND LITERACY

Income is summarized by national quintiles; 1/5 of the national population that has income from salary and wages is in each quintile. Because these quintiles are national and because they are based on income data from all Canadians, not just those in the IALS sample, it should not be expected that 1/5 of the Ontario sample should be in each quintile. The income range for each quintile are:

Lowest	$1 - $8,000
Next to lowest	$8,001 - $18,000
Middle	$18,001 - $27,000
Next to highest	$27,001 - $40,000
Highest	Over $40,000

There is a strong and consistent relationship between literacy and income from salary and wages. Individuals at level 4/5 are more likely to be in the highest quintile than are individuals at any other literacy level. While being at level 3 does not make it more likely that an individual is in a high quintile than being at level 2, it does make it less likely that he or she will be in the lowest quintile. Those at literacy level 1 are most likely to be in the lowest quintile.

There are some differences among the scales in the relationship to income. Document and quantitative are more strongly related than is prose.

The left graph in Figure 9 shows the income penalty for being at a low literacy level and the one on the right the payoff for being at a high literacy level.

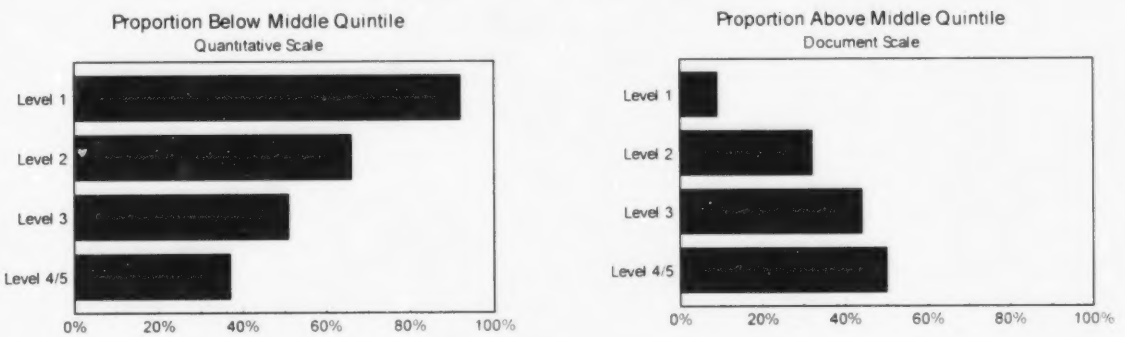

Figure 9. Comparison of the effect on income of being at different literacy levels, Ontario residents, 16 and older, with wage or salary income.

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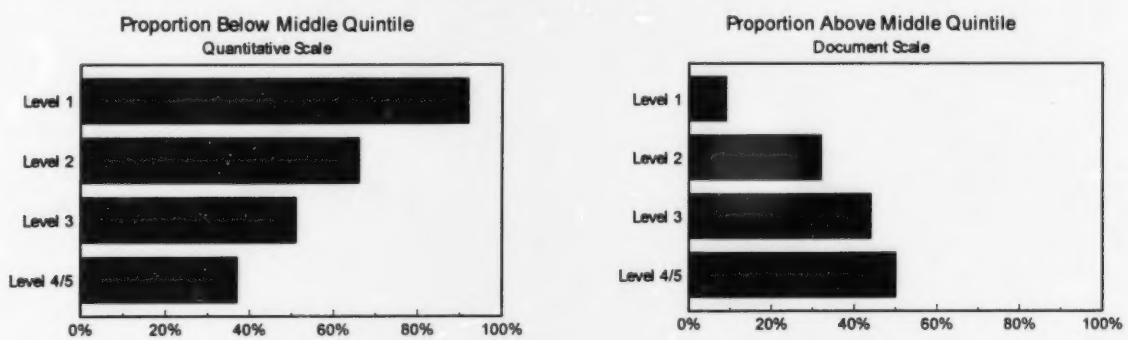

Figure 9. Comparison of the effect on income of being at different literacy levels, Ontario residents, 16 and older, with wage or salary income.

Table 16. Distribution of income from salary and wages by literacy on all three scales, Ontario residents, 16 and older.

Prose Level	Wage and Salary Income Quintile				
	None/Lowest	Next to Lowest	Middle	Next to Highest	Highest
			%		
Level 1	69.1	18.8*	2.7*	7.3	2.1*
Level 2	49.8	7.9	3.8	19.6	19.0
Level 3	46.8	11.6	7.4	16.9	17.3
Level 4/5	29.3	10.0	19.7*	15.1	25.9

Document Level	Wage and Salary Income Quintile				
	None/Lowest	Next to Lowest	Middle	Next to Highest	Highest
			%		
Level 1	70.2	18.4*	1.9*	4.4*	5.1*
Level 2	59.8	6.9	2.0*	15.5	15.9
Level 3	36.6	8.9	20.0	21.1	13.3
Level 4/5	31.3	13.0*	6.0*	17.1	32.5

Quantitative Level	Wage and Salary Income Quintile				
	None/Lowest	Next to Lowest	Middle	Next to Highest	Highest
			%		
Level 1	71.5	20.2*	2.3*	4.4*	1.7*
Level 2	57.1	8.9	8.2	10.0	15.8
Level 3	42.1	8.5	4.8	25.7	18.8
Level 4/5	25.5	11.2*	20.8*	13.8	28.7

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

USING LITERACY SKILLS AT WORK

Individuals with higher literacy skills use those skills. Or perhaps individuals who use literacy skills frequently have higher skills as a result. Most likely, both are the case. There are a few notable exceptions. Use of measurement math appears unrelated to skill, though money math shows a regular relationship with skill.

Level 3 individuals are particularly interesting. The difference between level 3 and level 2 is small on reading practices, but larger on writing. Conversely, level 3 and level 4/5 are more similar on writing than on reading.

Table 17. Relation between literacy skill and literacy practices at work, Ontario residents, 16 and older.

Document Literacy Scale	Proportion Who Read Texts of This Kind at Work at Least Once a Week				
	Letters, Memos	Reports, Articles	Manuals, Reference books	Diagrams, Schematics	Bills, Invoices, Spreadsheet
			%		
Level 1	33.8	28.3	27.0	19.2*	33.9
Level 2	69.9	61.1	55.5	25.0	54.0
Level 3	74.2	58.0	46.4	30.7	54.4
Level 4/5	89.1	75.8	72.6	47.0	64.1

Prose Literacy Scale	Proportion Who Write Texts of This Kind at Work at Least Once a Week			
	Letters, Memos	Forms, Bills, Invoices	Reports, Articles	Estimates Specifications
			%	
Level 1	19.2	21.6	13.1	8.7
Level 2	53.4	52.4	30.1	27.8
Level 3	62.9	55.1	49.3	33.8
Level 4/5	60.8	46.1	40.4	23.1

Quantitative Literacy Scale	Proportion Who Carry Out Arithmetic Operations of This Kind at Work at Least Once a Week	
	Measure or Estimate Size or Weight	Calculate Prices, Costs, Budgets
	%	
Level 1	51.4	28.2
Level 2	61.5	41.4
Level 3	54.4	52.1
Level 4/5	45.2	55.7

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

It is likely that both frequency and variety need to be taken into account in considering literacy use. Table 18 presents a reading and a writing intensity index which combines frequency and variety. This table also demonstrates the difference between levels in use and shows again that level 3 is most like level 2 on reading and most like level 4/5 on writing.

The reading and writing indexes are calculated for each respondent simply by counting the number of types of text read or written at least once a week. (See Table 17 for types of text.)

Table 18. Reading and writing intensity indexes (reading and writing at work) for different levels of literacy (document scale for reading, prose scale for writing), Ontario residents, 16 and older.

Literacy Scale (Reading = Document Writing = Prose)	Average Reading Intensity Index (Maximum = 6)	Average Writing Intensity Index (Maximum = 4)
Level 1	1.8	0.6
Level 2	2.9	1.6
Level 3	2.9	2.0
Level 4/5	3.9	1.7

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

These tables show that differences in literacy skill are related to differences in literacy practices, but they do not reflect how individuals feel about their skill, Tables 19 and 20 present the respondents' self-reflection on how their skill affects them at work.

Table 19. Distribution of self-ratings of skill for use at work by literacy level, Ontario residents, 16 and older.

Document Literacy Scale	Proportion Who Rate Their Skills for Reading at Work As ...				
	Excellent	Good	Moderate	Poor	No Opinion
			%		
Level 1	18.9	23.2	12.1*	14.1*	31.7*
Level 2	34.9	55.9	6.3*	0.2*	2.7*
Level 3	76.7	20.9	1.6*	0.3*	0.5*
Level 4/5	81.2	17.4	0.9*	0.1*	0.5*

Prose Literacy Scale	Proportion Who Rate Their Skills for Writing at Work As ...				
	Excellent	Good	Moderate	Poor	No Opinion
			%		
Level 1	11.5	20.8	14.4	35.1	18.3*
Level 2	48.9	45.6	2.1	1.0*	2.3*
Level 3	60.0	29.7	8.4	0.5*	1.4*
Level 4/5	65.5	34.1	0.1*	0.0*	0.3*

Quantitative Literacy Scale	Proportion Who Rate Their Skills for Mathematics at Work As ...				
	Excellent	Good	Moderate	Poor	No Opinion
			%		
Level 1	33.4	46.0	8.6	3.2*	8.9*
Level 2	24.6	59.0	12.8	0.9*	2.7*
Level 3	52.0	39.5	4.7*	0.8*	3.0*
Level 4/5	58.0	25.1	15.6*	0.3*	1.1*

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Individuals with higher skill are markedly more likely to rate themselves excellent. It must be remembered that since many level 1 respondents report doing little reading or writing at work, they may be providing appropriate ratings when they say their skills are excellent.

Table 20. Distribution of estimates of skill limitation by literacy level, Ontario residents, 16 and older.

Document Literacy Scale	How Limiting Are Your Reading Skills at Work		
	Not at all limiting	Somewhat limiting	Greatly limiting
		%	
Level 1	62.0	34.0*	4.0*
Level 2	93.6	6.4*	0.0*
Level 3	95.4	3.1*	1.6*
Level 4/5	99.5	0.5*	0.0*

Prose Literacy Scale	How Limiting Are Your Writing Skills at Work		
	Not at all limiting	Somewhat limiting	Greatly limiting
		%	
Level 1	76.6	15.6	7.7*
Level 2	96.0	3.7	0.3*
Level 3	92.2	6.9	0.9*
Level 4/5	99.3	0.7*	

Quantitative Literacy Scale	How Limiting Are Your Mathematics Skills at Work		
	Not at all limiting	Somewhat limiting	Greatly limiting
		%	
Level 1	75.6	18.7	5.7*
Level 2	93.3	6.7	0.0*
Level 3	97.4	2.5	0.0*
Level 4/5	99.1	0.9*	.

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Few individuals above level 1 on any scale think that their skills limit their opportunities either to gain a promotion or a better job. Of those who do see their skills as limiting, more make this statement about their reading skills than about their writing or mathematics skills.

LITERACY AND DAILY LIFE

In daily life outside work, just as at work, individuals with higher skill tend to report more frequent reading of a variety of texts. Individuals at level 2, however, do report more reading than those at level 3. Respondents were not asked about their writing and mathematical practices in daily life. An intensity index of reading in daily life, Table 22, reveals more simply the effect of level on overall reading practices.

Table 21. Relation between document literacy skill and literacy practices in daily life, Ontario residents, 16 and older.

Document Literacy Scale	Proportion Who Read Texts of This Kind in Daily Life Outside Work at Least Once a Week				
	Letters, Memos	Reports, Articles	Manuals, Reference books	Diagrams, Schematics	Bills, Invoices, Spreadsheet
			%		
Level 1	33.9	38.5	25.4	7.1*	38.7
Level 2	59.5	68.7	53.8	17.4	51.9
Level 3	47.6	58.5	44.0	17.4	60.4
Level 4/5	57.8	81.9	61.3	28.5	75.8

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

The daily reading intensity index is calculated for each respondent simply by counting the number of types of text read at least once a week outside work. (See Table 21 for types of text.)

Table 22. Reading intensity score by prose literacy level for daily reading outside work, Ontario residents, 16 and older.

Prose Literacy Level	Average Reading Intensity Index (Maximum = 6)
Level 1	1.7
Level 2	2.9
Level 3	3.3
Level 4/5	3.2

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Table 23. Distribution of self-ratings of literacy skills for daily life by level of literacy skill, residents of Ontario, 16 and older.

Document Literacy Scale	Proportion Who Rate Their Skills for Reading in Daily Life as...			
	Excellent	Good	Moderate	Poor
			%	
Level 1	23.8	30.8	16.4	29.0
Level 2	35.0	55.3	5.3	4.3*
Level 3	76.3	21.0	2.4*	0.3*
Level 4/5	88.0	11.9	0.1*	0.0*

Prose Literacy Scale	Proportion Who Rate Their Skills for Writing in Daily Life as...			
	Excellent	Good	Moderate	Poor
			%	
Level 1	11.9	26.2	22.7	39.3
Level 2	40.1	47.1	5.8	7.1*
Level 3	63.7	29.3	6.1	0.9*
Level 4/5	74.0	25.5	0.3*	0.2*

Quantitative Literacy Scale	Proportion Who Rate Their Skills for Mathematics in Daily Life as...			
	Excellent	Good	Moderate	Poor
			%	
Level 1	23.4	42.3	22.4	11.9
Level 2	34.5	44.6	14.3	6.7*
Level 3	55.0	37.2	6.5	1.3*
Level 4/5	67.0	19.4	13.5*	

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

The higher the level, the more likely individuals are to rate their skills excellent and, conversely, the lower the skills, the more likely they are to rate them moderate or poor. The IALS respondents tended to be more critical of their writing and mathematics skill for daily life than of reading.

As with the self-ratings of skill, expressions of satisfaction vary with literacy level; those at the highest level are most satisfied. It is notable that over 1/3 of those respondents at this level expressed some degree of dissatisfaction with their skill.

Table 24. Relationship of self-defined satisfaction with literacy skills to prose literacy skill, Ontario residents, 16 and older.

Prose Literacy Scale	Proportion Who Rate Their Skills for Reading at Work As ...				
	Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied	No Opinion
			%		
Level 1	25.8	31.3	21.3	17.6	4.1*
Level 2	64.2	28.9	0.6*	6.2*	0.0*
Level 3	76.6	20.7	2.3*	0.4*	
Level 4/5	83.4	16.5	0.1*		

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Table 25. Relationship between literacy skill and participation in various literacy related activities, residents of Ontario, 16 and older.

Literacy Scale	Proportion Who Say They Engage in Various Literacy Related Activities on a Regular Basis				
	Visit Library Monthly (Prose)	Read Books Daily (Prose)	Read Newspaper Weekly (Document)	Write Letters Weekly (Prose)	Do Volunteer Activities Monthly (Document)
			%		
Level 1	14.2	17.5	67.5	11.9	10.7
Level 2	17.2	33.1	95.6	21.3	20.6
Level 3	34.9	43.1	91.8	25.0	38.7
Level 4/5	44.9	65.9	94.6	25.1	24.9

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Individuals with higher literacy skills report that they more frequently engage in a number of literacy-related activities. Most strikingly, the relationship of television watching and literacy skill is particularly strong. It is likely, though, that those with low skills watch more TV because that is a more accessible source of information and entertainment.

Table 26. Relationship of literacy skill to television viewing, residents of Ontario, 16 and older.

Prose Literacy Scale	Watch TV More Than 2 Hours Daily	Watch TV 1 Hour or Less Daily
	%	
Level 1	65.2	16.0
Level 2	52.1	26.0
Level 3	34.5	30.4
Level 4/5	19.2	48.6

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Appendix

A. Interpretive Descriptions of Levels and Domains Used in the International Adult Literacy Survey

Scale score ranges and task samples.

	Prose	Document	Quantitative
Level 1 (0 - 225)	Use the instructions on the bottle to identify the maximum duration recommended for taking aspirin.	Identify the percentage of Greek teachers who are women by looking at a sample pictorial graph.	Fill in the figure on the last line of an order form, "Total with Handling," by adding the ticket price of $50 to a handling charge of $2.
Level 2 (226 - 275)	Identify a short piece of information about the characteristics of a garden plant, from a written article.	Identify the year in which the fewest Dutch people were injured by fireworks, when presented with two graphs.	Work out how many degrees warmer today's forecast high temperature is in Bangkok than in Seoul, using a table accompanying a weather chart.
Level 3 (276 - 325)	State which of a set of four movie reviews was the least favourable.	Identify the time of the last bus on a Saturday night, using a bus schedule.	Work out how much more energy Canada produces than it consumes, by comparing figures on two bar charts.
Level 4 (326 - 375)	Answer a brief question on how to conduct a job interview, requiring the reader to read a pamphlet on recruitment interviews and integrate two pieces of information into a single statement.	Summarize how the percentages of oil used for different purposes changed over a specified period, by comparing two pie charts.	Calculate how much money you will have if you invest $100 at a rate of 6% for 10 years, using a compound interest table.
Level 5 (376 - 500)	Use an announcement from a personnel department to answer a question that uses different phrasing from that used in the text.	Identify the average advertised price for the best-rated basic clock radio in a consumer survey, requiring the assimilation of several pieces of information.	Use information on a table of nutritional analysis to calculate the percentage of calories in a Big Mac® that comes from total fat.

Appendix

B. Description of the Survey Sample

The basic sample is proportional to population for all provinces and regions. Table B.1 shows that oversampling for specific subpopulations has boosted the sample yield in the Atlantic provinces and Ontario. Other than New Brunswick (which sponsored an enhanced sample), only Quebec and Ontario have populations large enough to support estimates within the limits of the IALS sample size.[4]

Many readers may question the lack of estimates for some provinces. All were offered an opportunity to purchase additional sample, but only three - Alberta, Ontario, and New Brunswick - chose to do so.

The main study sample was drawn from the Labour Force Survey frame. As a result, it excludes residents of the Northwest Territories and Yukon, inmates of institutions, persons living on First Nations territories and full-time members of the Canadian Armed Forces. Although the survey included data on Aboriginal Canadians living off reserves, the estimates are too small to permit separate analysis.

Any survey is constrained by costs, sample size, study design, and objectives. Certain important issues in literacy, such as family literacy practices, have not, for instance, been explored in this report for lack of either data or space. However, it still provides a rich understanding of the role and place of this key human capital skill in Canada's future.

Table B.1 IALS sample size by region

Region	Sample Size	Population aged 16 and over
Atlantic provinces[1]	1,535	1,786,424
Quebec	794	5,431,033
Ontario	1,925	8,004,546
Western provinces[2]	1,406	6,085,890
Canada	**5,660**	**21,307,893**

1. New Brunswick, Newfoundland, Nova Scotia, and Prince Edward Island.
2. Alberta, British Columbia, Manitoba, and Saskatchewan.

Table B.2 IALS sample size by age group

Age group	Sample Size	Population aged 16 and over
16 to 24	1,193	3,369,904
25 to 44	2,006	9,080,575
45 to 64	1,212	5,749,886
65 and over	1,249	3,107,529
Canada	**5,660**	**21,307,893**

Note: Numbers may not add due to rounding.

[4] The samples for Alberta and British Columbia allow only for univariate estimates of proficiency. More detailed analysis is not possible without resorting to complex, multivariate techniques.

C. National Literacy Statistics from the International Adult Literacy Survey

The following tables were released by Statistics Canada in September 1996.

Table C.1 The distribution of literacy skills on three scales by region and selected provinces of Canada, adults aged 16 and over

	Prose Reading Level			
	1	2	3	4/5
	%			
Canada	21.5	25.8	32.8	19.9
Atlantic Provinces[5]	24.9	25.5	35.1	14.6
New Brunswick	27.5	31.2	25.2	16.1
Quebec	27.8	25.5	38.7	7.9
Ontario	19.2	27.6	27.8	25.4
Western Provinces[6]	17.9	23.7	33.7	24.8
Alberta	14.6	21.3	35.5	28.6
British Columbia	19.1	24.0	35.2	21.7
	Document Reading Level			
	1	2	3	4/5
	%			
Canada	23.4	24.4	30.1	22.1
Atlantic Provinces	28.1	26.0	31.7	14.3
New Brunswick	29.4	30.4	23.7	16.4
Quebec	30.5	26.8	29.4	13.3
Ontario	21.1	21.7	31.2	25.9
Western Provinces	18.8	25.3	28.8	27.0
Alberta	15.7	20.8	33.4	30.2
British Columbia	19.6	28.6	26.5	25.4
	Quantitative Reading Level			
	1	2	3	4/5
	%			
Canada	21.8	26.1	32.4	19.7
Atlantic Provinces	23.1	30.2	30.3	16.4
New Brunswick	24.6	33.9	27.2	14.3
Quebec	28.4	31.7	30.3	9.7
Ontario	20.3	22.8	33.6	23.3
Western Provinces	17.6	24.4	33.2	24.9
Alberta	13.3	21.5	37.8	27.4
British Columbia	20.5	23.1	33.7	22.6

[5] New Brunswick, Newfoundland, Nova Scotia, and Prince Edward Island.

[6] Alberta, British Columbia, Manitoba, and Saskatchewan.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Table C.2 The distribution of literacy on each of three scales by highest level of educational attainment, Canadian adults aged 16 and over

Highest level of education	Prose Reading Level			
	1	2	3	4/5
	%			
Less than Grade 8	88.3	10.1	1.4*	0.2*
Competed primary school	58.8	28.5	12.3	0.5*
Some secondary school	25.2	36.2	31.5	7.1
Secondary school graduate	11.9	30.5	39.6	18.0
Community college graduate	6.8	22.9	45.1	25.3
University graduate	0.3*	10.7	33.1	55.8

Highest level of education	Document Reading Level			
	1	2	3	4/5
	%			
Less than Grade 8	92.7	6.2	1.0*	0.2*
Competed primary school	64.9	20.7	12.9	1.4*
Some secondary school	26.7	38.9	25.3	9.2
Secondary school graduate	12.7	29.3	35.6	22.3
Community college graduate	7.3	18.1	38.8	35.8
University graduate	3.1*	10.8	40.1	45.9

Highest level of education	Quantitative Reading Level			
	1	2	3	4/5
	%			
Less than Grade 8	90.7	7.8	1.3*	0.3*
Competed primary school	60.5	24.8	14.0	0.7*
Some secondary school	26.1	41.3	25.6	7.0
Secondary school graduate	10.6	32.8	41.0	15.6
Community college graduate	6.5	22.0	46.3	25.1
University graduate	2.0*	4.5	33.1	60.3

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Table C.3 Distribution of literacy by language of test, Canadian adults aged 16 and over

	Prose Reading Level			
	1	2	3	4/5
	%			
English	19.4	25.8	31.1	23.7
French	27.6	25.8	37.8	8.8
Quebec	27.0	25.3	39.1	8.6
Outside Quebec	33.4	30.4	24.9	11.2

	Document Reading Level			
	1	2	3	4/5
	%			
English	20.8	23.6	30.8	24.9
French	31.1	26.7	28.2	14.0
Quebec	30.9	26.6	28.5	14.0
Outside Quebec	33.3	27.3	25.2	14.3

	Quantitative Reading Level			
	1	2	3	4/5
	%			
English	19.7	24.2	33.1	23.0
French	27.8	31.8	30.1	10.2
Quebec	27.9	31.8	30.2	10.1
Outside Quebec	27.7	31.9	29.2	11.2

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Table C.4 Distribution of literacy by immigration status across the three scales, Canadian adults aged 16 and over

	Prose Reading Level			
Born in Canada?	1	2	3	4/5
	%			
Yes	17.7	26.6	36.6	19.2
No	35.6	22.9	19.3	22.3

	Document Reading Level			
Born in Canada?	1	2	3	4/5
	%			
Yes	20.1	25.4	33.1	21.3
No	35.6	20.6	19.1	24.7

	Quantitative Reading Level			
Born in Canada?	1	2	3	4/5
	%			
Yes	18.5	28.3	34.7	18.5
No	33.8	18.3	23.7	24.3

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Table C.5 The distribution of literacy by gender for each scale, Canadian adults aged 16 and over

	Prose Reading Level			
	1	2	3	4/5
	%			
Women	19.9	25.1	30.9	24.0
Men	23.2	26.5	34.9	15.5

	Document Reading Level			
	1	2	3	4/5
	%			
Women	25.2	23.5	30.0	21.3
Men	21.6	25.3	30.2	22.8

	Quantitative Reading Level			
	1	2	3	4/5
	%			
Women	22.6	27.0	32.8	17.6
Men	20.9	25.2	31.9	22.0

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Table C.6 Distribution of literacy by age across the three scales, Canadian adults aged 16 and over

Age group	Prose Reading Level			
	1	2	3	4/5
	%			
16 to 25	10.7	25.7	43.7	19.9
26 to 35	12.3	28.5	33.1	26.1
36 to 45	13.3	18.6	36.8	31.3
46 to 55	20.6	30.2	30.9	18.4
56 to 65	37.6	26.4	28.0	8.1
Over 65	53.0	26.8	18.5	1.7*

Age group	Document Reading Level			
	1	2	3	4/5
	%			
16 to 25	10.4	22.3	36.4	31.0
26 to 35	13.5	25.3	33.8	27.5
36 to 45	13.8	22.0	36.8	27.4
46 to 55	23.0	31.0	23.6	22.4
56 to 65	43.8	23.7	23.8	8.7*
Over 65	57.6	22.2	17.6	2.7*

Age group	Quantitative Reading Level			
	1	2	3	4/5
	%			
16 to 25	10.1	28.6	44.6	16.7
26 to 35	12.0	25.5	35.1	27.5
36 to 45	11.9	22.4	35.6	30.1
46 to 55	23.9	32.2	24.8	19.0
56 to 65	39.7	21.5	31.4	7.4
Over 65	53.3	26.5	16.4	3.8*

* Due to small sample size, readers should use these estimates with caution.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Table C.7 Distribution of levels of income from wages and salary by literacy levels, Canadian adults aged 16 and over reporting wage income

	Prose Scale				
	Income quintile **				
	1	2	3	4	5
	%				
Level 1	25.6	33.6	20.7	13.0	7.2*
Level 2	23.0	19.6	18.0	24.0	15.5
Level 3	22.7	18.5	18.8	19.3	20.6
Level 4/5	17.5	15.0	18.2	20.4	29.0

	Document Scale				
	Income quintile **				
	1	2	3	4	5
	%				
Level 1	25.0	39.1	15.2	10.3	10.3*
Level 2	24.6	18.7	21.1	18.3	17.3
Level 3	20.5	17.3	22.7	23.2	16.3
Level 4/5	19.5	15.3	13.5	21.5	30.3

	Quantitative Scale				
	Income quintile **				
	1	2	3	4	5
	%				
Level 1	28.2	31.3	24.7	9.1	6.7*
Level 2	23.3	24.2	21.9	13.6	17.0
Level 3	25.0	18.3	13.2	26.1	17.4
Level 4/5	12.8	12.5	20.9	21.9	31.9

* Due to small sample size, readers should use these estimates with caution.

** Income quintile ranges: 1 = $1 to $8,000; 2 = $8,001 to $18,000; 3 = $18,001 to $27,000; 4 - $27,001 to $40,000; 5 = $40,001 and over.

Source: *International Adult Literacy Survey*, Statistics Canada, 1995.

Appendix

D. Note to Readers on Statistical Error

Multiple sources of uncertainly and error are a fact of life in social science research. Given the comparative nature of the International Adult Literacy Survey (IALS), those responsible for the study's design and implementation went to extraordinary lengths to control and quantify such error and to establish the validity and reliability of the measures across languages and cultures. Yet error remains, error that must be taken into account in interpreting the statistical significance of observed differences in proportions. The two key sources of error present in the IALS study are presented below.

1. The IALS data are based on samples of individuals and are therefore subject to sampling error. Given the small size of the IALS sample in some jurisdictions, many small observed differences are not statistically significant.

2. The IALS data are based on different combinations of test items being administered to sampled individuals, a fact that introduces imprecision into the estimation. This source of error must also be taken into account in determining when observed differences are statistically significant.

The Educational Testing Service (ETS) has computed standard errors that capture the error associated with each estimate in the report. Interested readers may contact Statistics Canada to obtain a diskette including these data.

Statistics Canada, ETS, and the national study teams have performed extensive analyses to understand the nature and extent of error associated with the differences in design and implementation. They have yet to find evidence of serious problems. The IALS has also been the subject of an independent quality review; the reviewers unanimously recommended publication of the data.

Adapted from *Literacy, Economy and Society*. Statistics Canada, 1995, p. 19.